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DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
[60Day-14-14HW]
Proposed Data Collections Submitted for
Public Comment and Recommendations

In compliance with the requirement of Section 3506(c)(2)(A) of the Paperwork Reduction Act of 1995 for opportunity for public comment on proposed data collection projects, the Centers for Disease Control and Prevention (CDC) will publish periodic summaries of proposed projects. To request more information on the proposed projects or to obtain a copy of the data collection plans and instruments, call 404-639-7570 or send comments to LeRoy Richardson, 1600 Clifton Road, MS-D74, Atlanta, GA 30333 or send an email to omb@cdc.gov.

Comments are invited on: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden of the proposed collection of information; (c) ways to enhance the quality, utility, and clarity of the information to be collected; and (d)

ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology. Written comments should be received within 60 days of this notice.

Proposed Project

Evaluating Interventions for Airplane Cargo Baggage Handling - New - National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC).

Background and Brief Description

The mission of the National Institute for Occupational Safety and Health (NIOSH) is to promote worker safety and health through research and prevention. Under Public Law 91-596, sections 20 and 22 (Section 20-22, Occupational Safety and Health Act of 1970), NIOSH has the responsibility to conduct research to advance the health and safety of workers. In this capacity, NIOSH is seeking a three year approval from the Office of Management and Budget (OMB) to conduct a study to assess the effectiveness and cost-benefit of engineering interventions for reducing musculoskeletal disorders (MSDs) among baggage handlers working at airports. This project is part of the current mission of NIOSH to conduct scientific intervention

effectiveness research to support the evidence-based prevention of occupational injuries and illnesses.

In recent years (2009-2012), the overall annual incidence rate of work-related injuries resulting in days away from work, job transfer, or restricted work in the airport passenger transportation industry was approximately 7%. This is one of the highest rates in all job categories tracked by the Bureau of Labor Statistics (BLS). A very large proportion of the injury cases in the airport passenger transportation industry are musculoskeletal disorders (MSDs), especially low back disorders, which were found primarily in baggage handlers working in the ramp or tarmac area, where airplanes are parked for services.

Of the variety of ramp services provided for each flight, baggage handling for narrow-bodied airplane (e.g., McDonnell Douglas or MD Super 80, Boeing 737 and 757) poses a high risk for MSDs.

The baggage handling operations in the ramp area for narrow-bodied airplanes are performed in three main job positions: (1) lifting baggage from baggage cart to a belt loader (a self-propelled conveyor used for transferring baggage to the cargo compartment of the airplane), (2) lifting/pulling/pushing baggage from the belt loader to the

airplane baggage cargo compartment (a small room located in the belly of the airplane) at the compartment door, and (3) stacking baggage in the compartment. The baggage handling tasks are performed in a reversed order when baggage is unloaded from the airplane. The ceiling heights of the cargo compartments in the narrow-bodied airplanes range from 46-55 inches (1.2-1.4 m), resulting in a restricted working environment. Speed, efficiency and accuracy are important for the ground services to minimize operational costs. Short turnaround time and restricted cargo compartments make baggage transfer a very physically demanding job.

Because of the physically demanding working environment, many ergonomic risk factors, such as awkward postures, heavy lifting, high lifting frequencies and dynamic body movements, are inevitably present in the ramp services. These observed risk factors for MSDs have been documented by previous published investigations for baggage handlers. To avoid these risk factors for MSDs and increase baggage handling efficiency, some companies designed mechanical lifting aids. A recent literature review, however, indicates that there is little published information relating to evaluations of these mechanical lifting aids. No comprehensive risk, injury and cost benefit information associated with the lifting aids was previously reported. This study will provide current important information

on selected lifting aids for cargo baggage handling to improve the health and safety of baggage handlers working at airports.

On the basis of previous study findings and field feasibility, the two types of mechanical lifting aids (i.e., engineering interventions) selected for evaluations in the current study are the semi-automatic roller conveyor and vacuum lifting assist system. The vacuum lifting system is planned to be used in job position 1, while the roller conveyor is planned to be used in job positions 2 and 3.

NIOSH will collaborate with a large airline company to evaluate the two above-mentioned interventions at a study site feasible for implementation. A prospective study design will be used with a control group to evaluate the effectiveness of the interventions. An estimate of 960 ramp workers are planned to be recruited into the study. A subset (30) of the study participants will be randomly chosen to use one intervention, resulting in 60 participants total in the two intervention groups and 900 left to serve as the control group. MSD risk and incidence data will be collected by a self-reported questionnaire at baseline, one and two years after implementation of the two interventions. Additional MSD symptoms and intervention compliance information will be requested monthly by a short mail-in questionnaire. The effectiveness of the interventions will be assessed by a

reduction in MSD risks or incidence rates at the end of the two follow-up periods.

The primary health outcomes from the questionnaires include self-reported musculoskeletal symptoms in multiple body regions (neck, shoulders, low back and knees), sickness, absence, and medical attention due to the symptoms. The annual questionnaire will be used to collect additional information (demographics, alcohol consumption, health problems, etc.), job demands (work method, time spent on each job position, etc.), and psychosocial job characteristics (perceived job stress, co-worker support, etc.).

Video recording of the job tasks performed by a subset of participants (N=30) in the control group and all (N=60) in the intervention groups will be conducted by NIOSH investigators. A force gauge will be used by the NIOSH investigators to measure participants' hand forces for baggage handling tasks. Physical risk data will be determined by estimated working posture in the video recording and measured force data using a biomechanical model. Baggage weight information in the airline company baggage record system will be used to estimate the number of baggage handling operations per flight/day to estimate a cumulative risk.

The burden to respondents is determined by the required minimal sample size and the information necessary for a sound

study design. The questionnaires will be completed by respondents during their work time. There is no burden to respondents during video recording and hand force sampling because the video and force data collections will be conducted by NIOSH investigators without respondents' involvement. The estimated times for completing the annual and monthly questionnaires are 30 and 10 minutes per person, respectively.

An informed consent form will be collected one time during the initial enrollment period. An early exit phone interview will be conducted if the respondent decides to leave the study before the end date. The estimated burden of the interview is based on an estimated 20% drop-out rate.

There is no cost to respondents other than their time.

Estimated Annualized Burden Hours

Type of Respondents	Form Name	No. of Respondents	No. of Responses per Respondent	Avg. Burden per Response (in hrs)	Total Burden (in hrs)
Airline baggage handlers in the ramp area	Self-reported annual questionnaire survey for MSD symptoms and risk factors	960	1	30/60	480
	Self-reported monthly questionnaire for MSD symptoms and	960	12	10/60	1,920

	work method				
	Informed Consent Form	960	1	5/60	80
	Early Exit Interview	192	1	5/60	16
Total					2,496

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